

**Post Editing Guidelines  
For  
GALE Machine Translation Evaluation**

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# 1 Introduction

Machine Translation (MT) is a technology that translates language data from a foreign language into a target language. The source language for the GALE program will be either Arabic or Chinese, and the target language will English. Input data will be in the form of either audio or text, with the output always being text.

The GALE program will evaluate MT in terms of the quality of the system translations. This will be accomplished by measuring the edit distance between a system output and a gold standard reference. The term “edit-distance” refers to the number of edits (modifications) that someone needs to make to the output of a machine translation system such that the resulting text is fluent English and completely captures the meaning of the gold standard reference.

This document serves as a reference for those tasked with post-editing machine translation output for the GALE evaluations.

Section 2 of this document describes the role of the editor. Section 3 is organized so that each main point addresses a single high level rule, followed with examples and in rare occasions, exceptions. A short summary of each high level rule can be found in Appendix A.

Post Editor's should read through the entire document before beginning the editing process, and refer to it as necessary, but Appendix A was designed to serve as a one-page crib sheet.

A training session will be provided for each post editor. The editing interface will be covered during that training period.

## 2 Post Editor Role

The job of the MT post editors may be summarized as follows:

**“Make the MT output have the *correct meaning*,  
be *readily understandable*, and be *fluent English*.”**

The Post Editor should keep in mind that:

- There are equally-good alternative ways to edit the machine translation output, all being considered correct.
- The reference translation should be considered as being “perfect”.
- The resulting edited version should contain ***exactly*** the same meaning as the reference translation; *no more* information is to be included and *no less*.
- The resulting edited version should preserve as much of the original MT output as possible without compromising the other guidelines.
- The editing occurs on a segment-to-segment basis to make it more manageable for the post editors, but it is more correct to view these rules as applying to the document as a whole. In particular, translations are free to rearrange words and phrases over long distances (translation is not a word-by-word or phrase-by-

phrase mapping process). Similarly, post editors are not to edit on a word-by-word or phrase-by-phrase basis.

- If applicable, the emotional or stylistic intent of the reference translation should be reflected in the resulting edited MT.

### 2.1.1 Understanding the Level of Edit Effort

A comment about fluency or stylistic felicity: One can assign categories to the fluency of a translation. Consider the following possible categories:

- (1) Incomprehensible mess.
- (2) Ugly but minimally understandable
- (3) Non-native English. English with errors that eleven year old (sixth grader) native speakers of English do not normally make when speaking. Language spoken by children who are so young that they have not yet learned all the syntax of English. **Fundamental errors are present.** This category is *not quite English*.
- (4) Something that a normal eleven year old native speaker of standard English would be satisfied to produce when speaking to another eleven year old native speaker of standard English. There are no important syntax errors. Verbs are in the correct tense, and their arguments are correct. Words are used with the correct meaning. Spoken English where the speaker actually knows English, but it's not very polished. Casual conversation between ordinary adult native speakers of English, where content is not pre-planned. **No fundamental errors.** Can reasonably be called English.
- (5) Spoken English that a high-school teacher who is a native speaker of English might produce when teaching, or that a typical newspaper news article might contain. Typical prepared business talks and scientific/technical talks. Talk show hosts. Reasonably educated adult native speaker of English who already knows what they intend to get across, and who is speaking spontaneously or is writing a first draft letter to an ordinary friend.
- (6) Typical professionally edited non-fiction books intended for the general public. Typical mass-market fiction. Network news *read* by the anchor person. This category is written English that is not a first draft.
- (7) English that a highly polished speaker such as a well-spoken politician or minister might produce in a prepared speech written in advance and read from notes/script, or which might appear in a well-polished essay or a literary novel in English. English in this category has been re-written repeatedly and polished to the highest degree by someone with a well-developed sense of style.

As the MT output is edited, it should be turned into something that is not less than category 4 or 5 (remove fundamental errors, so that it is really English and has no real errors). The stylistic fluency of the edited version doesn't have to be as good as the reference translation (the reference is probably category 5 or 6).

## 3 Editing Rules

This section outlines the rules for each of the guidelines identified in Appendix A. The post editor must strictly adhere to these rules.

### 3.1 Capturing the Meaning of the Reference

**Rule #1:**

Make the MT output have exactly the **same meaning** as the reference human translation. No more and no less.

Rule #1 represents the primary rule of post editing. Under no circumstance should the post editor sacrifice capturing the meaning of the reference translation in order to better meet the requirements of another rule. The English language allows the same information to be presented in several ways. The post editor should focus on capturing the meaning in the reference translation, not necessarily creating a word-for-word parroting of the reference text.

It is important to capture the complete meaning. At times the MT output will be missing information that will need to be added while other times the MT output will include extra information that must be removed. Consider the reference to be *a/ways* correct.

#### 3.1.1 Synonyms

Synonyms are completely acceptable.

#### 3.1.2 Acronyms

Acronyms **cannot** be substituted for the expanded written form, and visa versa. If an acronym is used in the reference data, the same acronym must be used in the edited MT.

#### 3.1.3 Symbols

Symbols such as the dollar sign '\$', percent symbol '%' and the pound sign '#' are equivalent to the written form and should not be edited.

The following example is fine as is, and need not be edited:

**Reference:** The company stock rose by 6 percent to \$22.50.

**MT output:** The company stock rose by six% to twenty-two dollars and fifty cents.

#### 3.1.4 Numbers

Numbers may be either spelled out as in "one-hundred and one" or written using numbers as in "101". Do not change either form to the other. Do not insert or remove hyphens in forms like "twenty-two".

### 3.1.5 Abbreviations

Abbreviations are completely acceptable. “Mr.” for “Mister” and “lbs” for “pounds” are just two examples.

### 3.1.6 Phrasal Ordering

The order of phrases only needs to be changed to correct the meaning or to follow other guidelines in this document. For instance, the following is fine as is, and need not be edited:

**Reference:** Since the light was red, he stopped his car.

**MT output:** He stopped his car, since the light was red.

But the following example requires a reordering of the phrases in order to capture the meaning of the reference translation:

**Reference:** The protestors rallied against the government to change the outdated law.

**MT output:** The protestors will modify the outdated law to rally against the government.

**Edited MT:** *The protestors rallied against the government to modify the outdated law.*

Phrasal ordering may improve **fluency**, see section 3.6.

### 3.1.7 Parts of Speech

It is important that post editors carefully consider differing parts-of-speech to be sure that the complete and correct meaning of the reference data is captured in the MT output and made readily understandable.

#### 3.1.7.1 Verb Tense

The MT output must have the same verb tense as the reference when this makes a difference in the meaning. Verb tense may affect fluency, see section 3.6.

#### 3.1.7.2 Prepositions

Prepositions may need to be changed, inserted or deleted, in order to correct the meaning.

**Reference:** The rebels looked at the hills *beyond* the road after the smoke cleared.

**MT output:** When the rebels looked up the hills *under* the road the smoke cleared.

**Edited MT:** *The rebels looked at the hills beyond the road when the smoke cleared.*

In this example the prepositions “up” and “under” must be changed.

Some languages, for example Chinese, do not use prepositions as often as English, post editors should insert prepositions that are missing due to excessively literal word-by-word translations. In the following example the source language that was translated into “help you”, actually means something like “in support of you” or “for you”.

**Reference:** I will find him for you.

**MT Output:** I help you find him.

**Edited MT:** *I will help you find him.*

### 3.1.7.3 Adverbs and Adjectives

At times adverbial and adjectival constructions will need to be changed or added to relate the correct meaning. If the reference used the phrases “*lofty* goals” and “*dangerous* job”, the meanings conveyed by both lofty and dangerous must be included in the MT output.

In some cases, the need to make an addition or change will be a judgment call by the post editor.

### 3.1.7.4 Determiners

Determiners are sometimes required to convey the complete meaning, as in:

**Reference:** ...representing *the* different historical periods of Egypt.

**MT output:** ...representing different historical periods of Egypt.

Subtle, but the determiner “*the*” is required to communicate the fact that **all** the historical periods are represented.

### 3.1.7.5 Pronouns

Pronouns should be correct and may be used in place of their corresponding noun if the meaning is correct.

### 3.1.8 Extra Information in MT Output

If it is the case that the MT output contains information that is not in the reference translation, delete it. In the following example “evening” should be deleted from the MT output:

**Reference:** The bomb went off on Tuesday.

**MT output:** The bomb exploded on Tuesday *evening*.

**Edited output:** *The bomb exploded on Tuesday.*

**COMMENT:** This was a simple example. The post editor was able to make a decision based on a single segment. It is the case however, that at times the post editor will have to consider segments *before* and *after* the one being edited in order to correctly determine if the information is indeed extra rather than simply moved from a different sentence/segment.

The structure of the English language is very different from some languages. English might convey information by inflecting verbs or by the form of a noun or pronoun where other languages convey the same meaning by means of more verbose syntax.

It is OK if the MT output has the *same* meaning as the reference but conveys that meaning in a more wordy fashion. For example it would be considered correct if the MT output had “five head of cattle”, where the reference had something like “five cattle”.

### 3.1.9 Information Missing from MT Output

This is the counterpart of the preceding rule. If some of the *meaning* of the reference is missing from the MT output, it must be added. The MT output is to be a complete translation.

**Reference:** The interim Iraqi government will hold its first election on January 30. The US has deployed nearly 20,000 additional troops to ensure the security of the *Iraqi* election.

**MT output:** The Iraqi interim government election is scheduled to be held on January 30. The United States has deployed some 20,000 troops to protect the security of the election.

**Edited MT:** The Iraqi interim government's *first* election is scheduled to be held on January 30. The *US* has deployed some 20,000 troops to protect the security of the election.

Note:

- (1) The fact that this was the “first” election was added.
- (2) The spelled out “United States” was changed to match the reference acronym “US”.
- (3) The last occurrence of “Iraqi” in the reference was redundant and not added.

Since post editors are editing the translation as a whole, not by each individual word or phrase, it is OK if the MT omits duplicated or redundant words and phrases when the meaning is *unambiguously complete and correct* (as was the case with the last occurrence of “Iraqi” in the preceding example)

In the following example, the MT is acceptable **only if** because of other context we know that I fly in an airplane, rather than a helicopter or whatever.

**Reference:** I fly in an airplane from Shanghai to Beijing.

**MT output:** I fly from Shanghai to Beijing.

## 3.2 Making the MT Understandable

### **Rule #2:**

Make the MT output be as **understandable** as the reference.

Post editors should make the MT output as understandable as the reference translation, but must not try to make it more understandable.

### 3.2.1 Reference Ambiguity

At times the reference data will be fluent, but not understandable. Consider the following example:

**Reference:** Journalists and the media were only allowed to tell the people what the data or government dictated that they say.



**MT output:** Journalists and men information, only to convey to the people the dictates of statements by the government.

There is not a clear distinction in the *reference* between “journalists” and “the media”. “The data” does not have a clear distinction either. Here is what three editors did for this example:

**Post-editor1:** Journalists and the media were only allowed to convey to the people the dictates of the data or government.

**Post-editor2:** All that was available to journalists or media was to convey to the people the statements dictated by the data or government.

**Post-editor3:** Journalists and media were only allowed to convey to the people what the data or government dictated they say.

Note that all three editors were scrupulous about the meaning. Note **carefully** that the editors did not make the MT output *more* understandable than the reference, which might involve some compromise about the meaning of the reference.

### **3.3 Punctuation and Capitalization**

#### **Rule #3:**

Punctuation must be understandable, and sentence-like units must have sentence-ending punctuation and proper capitalization. Do not insert, delete, or change punctuation merely to follow traditional optional rules about what is “proper.”

If the punctuation in the MT output is acceptable, leave it unchanged.

#### **3.3.1 Sentence Ending Punctuation**

Insert missing sentence-ending punctuation, so that each sentence-like unit ends with sentence-ending punctuation as in the reference translation. Choose from a period ‘.’, a question mark ‘?’, or an exclamation mark ‘!’.

If the MT output is acceptable do not split or merge sentences just to match the reference.

#### **3.3.2 Quotation Marks**

Single and double quotation marks must be properly paired and quote the correct material. Note, that sometimes the quotation marks will span more than the segment currently being edited and may require looking ahead to see where the quote ends.

#### **3.3.3 Change/Insert/Delete Punctuation**

Punctuation should be corrected as needed to repair or disambiguate the meaning or to make the output understandable.

### 3.3.4 Capitalization

It is important that the edited machine translation output has proper capitalization, both for proper nouns, and for proper sentence construction.

## 3.4 *Inserting, Deleting and Substituting Words*

### **Rule #4:**

If words/phrases/punctuation in the MT output or in the reference human translation are completely acceptable, use them rather than inserting or substituting something new and different.

Ignore this rule when it conflicts with the other rules, or when words/phrases from the reference need to be inserted and a substantially shorter replacement with exactly the same meaning can be thought of.

Post editors should limit the use editorial license to a minimum. Do not change perfectly acceptable words that exist in the MT output just because **you** have a preference for something else.

### 3.4.1 Spelling

Do not fix spelling variants in spelling such as “the colour grey” that reflect British usage.

### 3.4.2 Proper Names

There is no one correct English transliteration of foreign names. Do not try to fix transliterations of names. For example, the following are all equivalent:

“Al Saud”      “Al’Saud”      “Al-Saud”

## 3.5 *U.S. Conventions for Dates and Decimal points*

### **Rule #5:**

Dates, as well as the commas and decimal points in numbers, should be formatted according to U.S. conventions (for example, convert 23-2-2004 to 2-23-2004).

The representation of dates and decimal points should be according to U.S. conventions.

### 3.5.1 Dates

The preferred format for dates is to follow the U.S. convention of **month-day-year** (i.e., 7/21/1989). This rule is to be followed to correct the date when it is using the representation of day-month-year.

This rule does not apply when part of the date is spelled out, as in the following example where no editing is required:

**Reference:** The bomb exploded on 7/21/1989.

**MT output:** The bomb detonated on the 21<sup>st</sup> of July, 1989.

### 3.5.2 Decimal Points

It may be the case that a comma is used in place of the decimal point. Post editors should correct this “European” format to the American format.

## 3.6 Fluent English

### **Rule #6:**

Make the MT output sufficiently fluent that it is really English.

Even with all the other rules in mind, it is very important that the resulting edited MT be acceptably **fluent English**, but not at the expense of completely capturing the *meaning* and making the translation *understandable*.

At times, changing the order of phrases will turn the translation into acceptably fluent English. Here are some examples where the order of phrases reflects the structure of a foreign language that would normally put the topic first, when English would normally put the subject of the verb first. Post editors *should* rearrange the words in each sentence if the English is awkward (which is a judgment call). The following set of examples might be considered awkward without any more context.

Examples:

**MT:** This book I have read.

**Reference:** I have read this book.

**MT:** In the yard is parked a car.

**Reference:** A car is parked in the yard.

**MT:** Swimming I am the best.

**Reference:** I am the best swimmer.

**MT:** A dog have I.

**Reference:** I have a dog.

Post editors should insert missing verb tenses/inflections when the MT is not reasonably fluent English.

## 4 Appendix A

Appendix A contains the guidelines for editing the machine translation output (MT output). This is the set of rules each post editor should keep near them while they edit until they are committed to memory. **Do not spend a long time trying to find the absolute minimal edit, the very best word, or “the felicitous phrase” — don’t agonize.**

Make the MT output have the *correct meaning*, be *readily understandable*, and be *fluent* English.

1. Make the MT output have exactly **the same meaning** as the reference human translation. No more and no less.
2. Make the MT output be as **understandable** as the reference.
3. Punctuation must be understandable, and sentence-like units must have sentence-ending punctuation and proper capitalization. Do not insert, delete, or change punctuation merely to follow traditional optional rules about what is “proper.”
4. If words/phrases/punctuation in the MT output or in the reference human translation are completely acceptable, use them rather than inserting or substituting something new and different.
5. Dates, as well as the commas and decimal points in numbers, should be formatted according to U.S. conventions (for example, convert 23-2-2004 to 2-23-2004).
6. Make the MT output **sufficiently fluent** that it is really English.